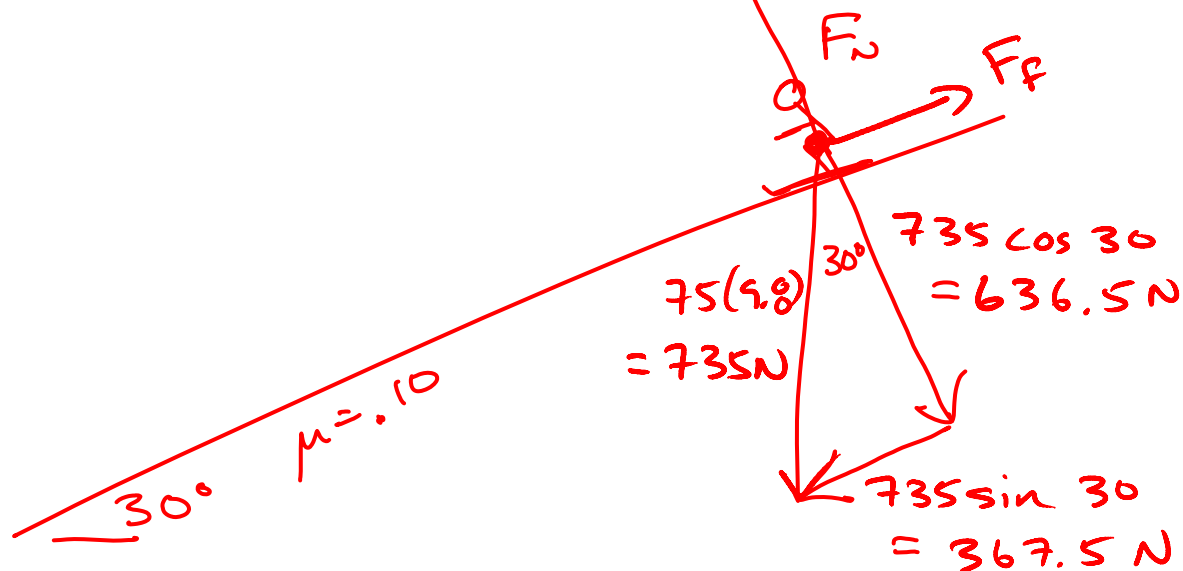


Example #9. A 75 kg skier starts down a  $30^\circ$  slope from rest. If the coefficient of friction is 0.10, what is the acceleration and speed 6.0 seconds after starting?



→ analyzing  $\perp$  forces:  $F_N = 636.5 \text{ N}$

→  $F_f = \mu F_N = .10(636.5) = 63.65 \text{ N}$

→  $F_{\text{net}} = 367.5 - 63.7 = 303.8 \text{ N}$

→  $F_{\text{net}} = ma$   $303.8 = 75a$

$$\boxed{a = 4.0 \text{ m/s}^2} \quad (4.05)$$

$$v_0 = 0 \quad t = 6.0 \text{ s.}$$

→  $v = v_0 + at = 4.05(6)$

$$\boxed{v = 24 \text{ m/s}}$$